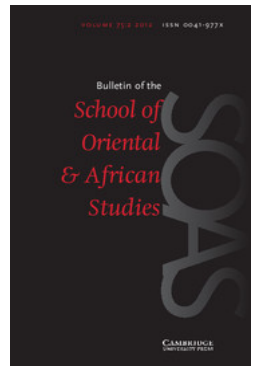

The root finals of Bantawa Rai verbs, and the congruence of phonology with grammar and lexis

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THE ROOT FINALS OF BANTAWA RAI VERBS, AND THE CONGRUENCE OF PHONOLOGY WITH GRAMMAR AND LEXIS

By R. K. SPRIGG

> 'The meaning of texts is dealt with by a dispersal of analysis at mutually congruent series of levels, beginning with contexts of situation and proceeding through *collocation*, syntax (including *colligation*) to phonology and phonetics.... Stylistics with some notice of phonaesthetic features, lexicography and the place and use of translation are to be included to complete the spectrum' (Firth, 1957: 30).

I. *Bantawa Rai and the Kiranti group of languages, especially Limbu*

I have the impression that the difference between Bantawa and the other Rai languages of eastern Nepal, such as Thulung, Khaling, and Chamling, roughly corresponds to the difference between German, Dutch, Frisian, and the Teutonic component of English; and the same is true of the difference between Bantawa and Limbu, which, though not classified as one of the Rai languages, can certainly be closely grouped with them under the term Kiranti.[1]

This relationship within the Kiranti group makes it possible, and useful, to take as the model for a phonetic and phonological analysis of Bantawa verb-root finals an earlier analysis dealing with Limbu verb-root finals (Sprigg, 1966), but revised, in Sprigg, 1984/5, in response to more recent phonological analyses of other Limbu dialects by Michailovsky (1979) and Weidert (1982).

The three-term final system: t, s, and z

Briefly, that revised analysis, Sprigg, 1984/5, groups the Limbu verb-root finals into three phonological classes. One of these three classes is based on a root-final cluster in which a dental, voiced or voiceless, is associated with a preceding plosive or nasal (**-pt -kt -md -nd**);[2] the second is based on a root-final cluster in which a final voiceless sibilant is associated with a preceding plosive or nasal (**-ps -ms**); and the third is based on a single final consonant, associated, therefore, with a preceding syllabic vowel (**-Vb -Vg -Vr -Vm -Vŋ**). Because dentality (**t d**) is a distinctive feature of the final piece for the first of these three

[1] Hale, 1982 (197–8) gives *Rai* as a 'cover term' for Sunwar, Bahing, Thulung, and Chaurāsya, and also for Dumi, Khaling, and Rai = Jindā (24–5, lines 15 and 16). From my experience of language nomenclature in eastern Nepal I would agree that his Jindā (usually spelt Jimdar; cf. Hale, 1982: 174) is an alternative to *Rai*; and I should wish to add to his list of Rai languages Sangpang, Kulung, Nachhereng, and Bontawa (usually spelt Bantawa; cf. Hale, 1982: 162) from his line 17, and Chāmbling (usually spelt Chamling; cf. Hale, 1982: 165) from his line 18. On linguistic grounds Limbu could also have been treated as a Rai language (and, with it, Yakha), and might well have been so treated if it had not been for the river Arun, a major barrier between the Rais to the west and the Limbus and Yakhas to the east, and for the custom of distinguishing Limbus from Rais in recruiting into the 7th and the 10th Regiments of the Brigade of Gurkhas, the so-called Rai-Limbu regiments (cf. Tuker, 1957: 36–8).

The twenty languages (including Rai and Khambu) listed in Hale, 1982 (pp. 24–5), together with Limbu and Yakha, are described, some in detail others only cursorily, in *Linguistic Survey of India*, III (1909), 283–381. All twenty two have bibliographical entries in Shafer, 1957, and four of them, Bahing, Limbu, Runchenbung, and Thulung, also appear in Shafer, 1963.

[2] To the phonetic symbols of the International Phonetic Association I have added the following: (i) **V**, for any appropriate vowel sound; (ii) **C**, for any appropriate consonant sound; (iii) **N**, for any appropriate nasal consonant; and (iv) superscript ', for ligamental phonation, in which 'the arytenoid cartilages are apparently clamped tightly together and only the front, ligamental part of the glottis actively participates in phonation' (Catford, 1977: 102; cf. also Catford, 1964: 32–3, and Sprigg, 1978: 9). The place of articulation symbolized by **t**, **d**, and **n** is dental in the Limbu, and alveolar in the Bantawa, examples.

classes, I have assigned the symbol t to that type of cluster piece; similarly, I have assigned the symbol s to the second type of cluster piece, to recall the sibilance (**s ɕ**) that distinguishes this type of final piece; and the remaining class, marked by a single final consonant or a final vowel, has had assigned to it the symbol z, not on phonetic grounds, like t and s, but, in default of a more suitable symbol, from the initial letter of the word *zero*. The system to which the three terms t, s, and z belong I have called the final system because it applies to the final part of the verb-root lexical item; e.g. (short-quantity verb roots in the upper, and long-quantity in the lower, line of each section)

	P	K	T	M	ŋ	N
t:	**ʔɛptɛ**	**thɒktɛ**		**jɛmdɛ**	—	**pindaŋ**
	li:ptɛ	**ka:ktɛ**		—	—	**thɒ:ndɛ**
s:	**ʔipsaŋ**		**phɔ(t)tɕhɛ**	**kɛnamsuʔ**		
	kɛfia:psu:		**phe:tshaŋ**	**ti:mɛɛ**		—
z:	**jɛbɛ**	**lagɛ**	**ɕɛrɛ**	**tɷmɛ**	**thɷŋɛ**	**tarɛ**
	fia:bɛ	**pe:gɛ**	**je:rɛ**	—	—	—

Table 1: *Limbu t-piece, s-piece, and z-piece root finals*

Glosses

t: fan it; fight; tattoo him; I jumped about; be heavy; jump over it; mend (clothes);
s: I slept; employ him; you smell it; you made him cry; I forgot; smoke (meat);
z: stand up; lick it; kill it; meet him; drink it; scold him; cry; go away; laugh.

The aspiration (**-(t)tɕh- -tsh-**) that is to be heard in the Ts type of final is due to the fact that non-aspirated medial affricates occur in Limbu only with voice; so voiceless affricates must be accompanied by aspiration.

An alveolar tap (**ɾ**) is shown as the phonetic exponent of both Tz and Nz; so one might be forgiven for wondering how the two types of final are to be distinguished; but in other types of junction the two types of root have distinct phonetic exponents: in word-final position, for example, Tz is distinguished from Nz by **t** versus **n**; e.g. **kɛ:ɕɛt** versus **kjɛ:dɔn** ('he kills you' *v.* 'he scolds you').

In table 1 I have distinguished six phonematic units, P, K, T, M, ŋ, and N; and, apart from Tz and Nz, already discussed in the preceding paragraph, the grounds for making this sixfold distinction can easily be arrived at by comparing the root-final phonetic features in each of the six columns. A dash symbol in any of the columns means that no such phonological final occurs in my data, which I believe to be exhaustive for the dialect concerned, the Pantharea dialect; thus, examples of ŋt in short-quantity roots, and Mt, ŋt, Ns, Mz, ŋz, and Nz in long-quantity roots appear to be lacking.[3] A blank space in any of the columns of table 1, as for Tt, Ks, ŋs, and Ns, means that examples can be found to fill the gap in distribution; but I have not included them in table 1 because they are not as clear-cut, or obvious, as those given there. I have elsewhere given grounds for recognizing the following sequences of sounds as phonetic exponents of these four absent finals (Sprigg, 1984/5: 16–18 and 5–6 respectively). The following seven types of final piece should therefore be added to fill the gaps in table 1:

[3] Michailovsky 1979/85, however, gives a single example, CAŋT [obscene], that would serve for the short-quantity-ŋt type, as compared with seventeen examples for my short-quantity -Nt type (16/370).

	Tt	Ks	ŋs	Ns	
short:	**-(t)t**	**-(k)kh**	**-ŋkh**	**-ntsh**	
long:	**-V:t**	**-V:kh**	**-ŋkh**		e.g.
short:	**mɷ(t)tɛ**	**tsa(k)khɛ**	**sɒŋkhɛ**	**nɒntshuʔ**	
long:	**pa:tɛ**	**thɛ:khɛ**	**mɛɖʱia:ŋkhennɛ**		

Table 2: *Less easily recognized types of Limbu root-final piece*

Glosses
short: blow it; wear it; sell it; he keeps it by him;
long: speak to him; tear it; do not weigh it.

In the phonetic transcription in table 2 and elsewhere round brackets mean that the sound represented by the enclosed symbol is confined to slow-tempo utterances.

Like the Ts piece the Ns piece also has aspiration as a feature, in addition to an intrusive **t** that shares its alveolar closure with the preceding **n** and its voicelessness with the following **s** (cf. the pronunciation of *branch* in English with **-ntʃ** rather than **-nʃ**).

The seventeen root-final categories Pt/s/z, Kt/s/z, Tt/s/z, Mt/s/z, ŋs/z, and Nt/s/z account for the majority of Pantharea Limbu root finals; there remain, however, three other types of piece, in both short-quantity and long-quantity roots. These three have either a final single consonant (**-V̊r -V:r -Vs: -V:s**) or a final syllabic vowel or non-syllabic front vowel (**-V̊(j) -Vj**) as phonetic exponents;[4] on phonetic grounds, therefore, they lend themselves to prosodic classification in terms of t, s, and z as follows, in association with a further phonematic unit. For this seventh phonematic unit I was tempted to use the alphabetic symbol Q, in conformity with the alphabetic principle that I had followed in assigning symbols to the other phonematic units P, K, T, M, ŋ, and N; but I eventually decided to use the symbol Ø, somewhat similar to the Greek letter **phi**, following Michailovsky, 1979; e.g.

	Øt	Øs	Øz
short:	**pi(:)rɛ**	**lɛs:uʔ**	**tɵ̀(j)ɛ**
long:	**po:rɛ**	**kɛjo:suʔ**	**tɒjɛ**

Table 3. *Remaining three types of Limbu final piece*

Glosses
short: give them it; he knows it; dig it;
long: grow big; you satisfy him; sew it.

In table 3 **r** occurs again, this time as part of the phonetic exponency of both t and Ø, as opposed to its function as part of the phonetic exponency of z and of T and N (table 1); but short-quantity examples of the Øt piece can be distinguished from Tz and Nz types of piece by the ligamental (or 'tight') phonation that accompanies them, e.g. **-ir** (cf. Sprigg, 1978: 4, 9, 15–16). This phonation difference does not, however, apply to long-quantity examples of the Øt piece, such as **-o:r**; but Øt-piece roots, of both long and short quantity, can be identified as such in other types of junction, in word-final position, for example, through **-ʔ**, versus the **-t** and the **-n** of the Tz-piece and the Nz-piece

[4] The glottal closure (ʔ), and consequent voicelessness, that occurs as an occasional alternative to ligamental phonation (V̊) in short-quantity lexical items, is no obstacle to voice as a common feature of both vowel and tap consonant (-V̊(ʔ)r-); for voicelessness, i.e. non-vibration of the vocal cords, as a constant feature of glottal closure, cf. Sprigg, 1978: 5–6).

roots respectively; e.g. **kɛbo(:)ʔ** 'you grow' (and the short-quantity example **kɛ:biʔ** 'he gives it to you').

In order to identify roots containing a Tz, Nz, or Øt piece, therefore, it is necessary to have recourse to a type of junction other than that shown in tables 1, 2, and 3. The type of junction shown for Pt, Tt, Ks, Ms, Nz, and Øz, etc. in those three tables is that in which the verb root is colligated with a suffix that begins with a vowel (V-), as in the imperative suffix **-ɛ**, the 1st-person intransitive past suffix **-aŋ**, and the 1st/2nd-person-subject-and-3rd-person object present suffix **-uʔ**. This vowel-initial type is generally the most effective for distinguishing the various types of piece (cf. also, for English, French, and Bantawa, (II. A. 1) below).

II. *Bantawa verb-root finals, and the three-term final system* (*t, s, z*)

In view of the phonetic, phonological, grammatical, and lexical similarity of Bantawa to Limbu within the Kiranti group (the 'East Himalayish Section' of Shafer, 1955: 102), it is not surprising to find that much the same set of prosodic and phonematic systems can be established for the dialect of Bantawa that I studied in 1956 in Chhinamukhu, half a day's walk from Bhojpur, in Province East No. 4 (now known as East no. 4 (Bhojpur) District of Sagarmatha Division). In this piece of research I had the assistance of Kharga Bahadur Rai, son of the *mukhiyā*, or headman, of Chhinamukhu, and formerly a sergeant in the 7th Regiment of Gurkhas. *The Linguistic Survey of India* (1909) distinguishes four dialects of Bantawa, namely, Lāmbichhōng, Chhingtāng, Waling, and Rūngchhēnbūng (pp. 355–61); in its vocabulary the dialect spoken in Chhinamukhu closely resembles the *Survey*'s Rūngchhēnbūng specimen and, less closely, the Waling (pp. 342–9).

Bantawa, probably now the most widely spoken of the Rai languages, differs from Limbu in not being a quantity language; but it corresponds to Limbu in lending itself to description through a three-term prosodic system, the final system, comprising t, s, and z, and through a seven-term phonematic system comprising P, K, T, Ø, M, Ŋ, and N, both of which systems apply to the final part of verb-root lexical items. The most clear-cut of the three is the t term; so I take it first, at (A), with the s term to follow, at (B), and, lastly, the z term, at (C).

A. The t term, and the phonematic system

1. *Junction of the verb root with a syllabic-vowel-initial suffix*

Like the Limbu root finals in (I) above syntagmatic grounds for distinguishing the Bantawa t prosodic class of root final are to be found in the type of junction in which the verb root is colligated with a suffix that contains an initial syllabic vowel (V); those grounds are, as in Sprigg 1966 (pp. 448–50) for Limbu, the need to associate an alveolar plosive, voiceless and unaspirated (**t**), with a preceding consonantal feature, either occlusion, whether labial, velar, or alveolar (**p k t**), or nasality, also labial, velar, or alveolar (**m ŋ n**):

p, k, t / **m, ŋ, n**	with **t**, as in	**-pt, -kt, -tt** / **-mt, -ŋt, -nt**	**V-**

Table 4: *Phonetic exponents of the t term, in vowel-initial junction*

Before giving examples to illustrate the seven types of root final, Pt, Kt, Tt, Øt, Mt, Ŋt, and Nt, in the junction context in which they are associated with a

following syllabic vowel (V) (table 6) I give examples of the syllabic-vowel-initial type of suffix; this type of suffix includes:

e	imp.
anɛ	imp. (pol., plu.)
aŋ	1st-pers.-sing. subj. past intr.
	1st-pers.-sing. obj. past trans. (3rd-pers.-subj.)
ɷŋ	1st-pers.-sing. subj. past trans. (3rd-pers.-obj.)
a	2nd-pers.-sing. subj. past intr.
	3rd-pers.-sing. subj. past intr.
u	2nd-pers.-sing. subj. past trans. (3rd-pers.-obj.)
	3rd-pers.-sing. subj. past trans. (3rd-pers.-obj.)
ɷŋu	3rd-pers.-sing. subj. pres. trans. contin.
un	2nd-pers.-plu. subj. pres. intr.
	2nd-pers.-plu. subj. pres. trans. (3rd-pers.-obj.)
	2nd-pers.-plu. subj. past intr.
ɷm	2nd-pers.-plu. subj. past trans. (3rd-pers.-obj.)

Table 5. *Syllabic-vowel-initial verbal suffixes*

Four of these syllabic-vowel-initial suffixes, **e**, **aŋ**, **a**, and **ɷŋ**, are contained in the examples of Pt, Kt, Øt, Mt, ŋt, and Nt roots in table 6:

P	K	T	Ø	M	ŋ	N	
-pt	**-kt**	**-tt**	**-tt**	**-mt**	**-ŋt**	**-nt**	**V-**

e.g.

(i) **ʔepte lekte mɷtte ɪtte damte dɷŋte phuntaŋ**
(ii) **ʔipte khakta sjette ʔɛtte ʔɷmte təŋtɷŋ tsante** [5]

Table 6: *t-final piece in verb roots; syllabic-vowel-initial junction*

Glosses

(i) winnow it; lick it; blow it; laugh at it (bring it down); brand it; drink it for—; I jumped;
(ii) make—sleep; it was bitter; tell—to kill—; defecate on—; suck it; I chased—away; feed (graze)—.

Identical phonetic exponents for Tt and Øt

It will be seen that in the t-final piece (table 6) the two phonematic units T and Ø have identical phonetic exponents: voicelessness, alveolarity, occlusion (**t**); the grounds for distinguishing a Ø-final root from a T-final root cannot, therefore, be phonetic. The criterion by which Øt is distinguished from Tt is, in fact, grammatical; it depends on the possibility of associating a Øt-final root with a Øz-final or a Øs-final root in a relationship of transitive versus intransitive, causative *v.* non-causative, or benefactive *v.* non-benefactive; e.g.

Øt tr.	**ɪtte**	laugh at—;	bring—down;
Øz intr.	**i(:)a**	(he) laughed;	(he) came down;

[5] The vowel sounds symbolized as **i** and **e** in this table are slightly more open when followed by two (voiceless) consonants, as in **-ept**, **-ekt**, and **ipt**, for example, than when followed by a single consonant, as in **-ir**, e.g. **khiru** ' she bought ', and **er**, e.g. **sere** ' kill it '; and I had difficulty in deciding whether I ought not rather to symbolize them as ɪ and ɛ respectively (cf. also **-epŋ** and **-ekŋ** in table 11. A further degree of openness is to be observed where the following two consonants are voiced, **-bd-**, **-gd-**, and **-dd-** (table 11); and here I had no hesitation in using the symbols ɪ and ɛ; e.g. **masjɪbde** ' do not cut ', **masjɛbde** ' do not sharpen '.

Øt ben.	**tɷtte**	dig it for—;	tr. **matte** lose it;
Øz non-ben.	**tu:je**	dig it;	intr. **maa** it got lost;
Øt tr.	**ɛtte**	defecate on —;	**bfiɛtte** break wind at—;
Øs intr.	**ʔe:sje**	defecate;	**bfie:sje** break wind.

It would be reasonable to expect the phonetic exponents of Tt to be **-tt** (as indeed they are; table 6) but those of Øt to be ***-t**, with the result that Øt would be distinguished from Tt by shortness versus length (**-t** *v.* **-tt**, or **-t:**). It may well be that at an earlier stage of the language the Øt examples **ɪtte** and **tɷtte** above were ***ite** and ***tute**, and thereby distinguished from Tt. If so, they would also have been distinguished from Tz, which has **r**, a voiced alveolar tap, for its exponent in this type of junction (alternating with **t**, **d**, and **ʔ** according to type of junction (C. 2–4) below; e.g.

Tz: **sere** ' kill it '; **ware** ' wear it '.

Since ***-t** does not occur in syllabic-vowel-initial junction, the hypothetical phonetic exponent ***-t** would have been under pressure either to be weakened to a tap articulation (**r**), and so become identical with the phonetic exponent of Tz, or to be strengthened through length, to **-t:**, and so become phonetically identical with **-tt**, the phonetic exponents of Tt. I assume that it has followed the latter course, with a matching change in the degree of openness, and centralization, of the vowel ***i**; e.g. ***ite** > **ɪtte**, ' laugh at — '.

In order that an instance of **-tt** in a root final may be identified as the phonetic exponent of Øt rather than Tt, it is, as I have explained above, necessary to adduce an example of a grammatically related lexical item belonging to the Øz-final or Øs-final class; but no such criterion is necessary for Tt. That is to say, **-tt** is assumed to be the exponent of Tt unless it can be proved, grammatically, to be the exponent of Øt. There are, however, as one would expect, a number of examples in which a Tt verb root has a grammatically related Tz or Ts root; e.g.

Tt caus.	**sjɛtte** tell—to kill;	**watte** garland (him);
Tz trans.	**sere** kill (it);	**ware** wear (it);
Tt ben.	**kjɛtte** break it for—;	**dfiɛtte** cut it for—;
Tz non-ben.	**kjere** break (it);	**dfiere** cut (it);
Tt trans.	**tɕhɛtte** urinate on—;	tr. **wɛtte** sow it;
Ts intr.	**tɕhe(:)ɕa** he urinated;	tr. **we(:)ɕe** throw it;
Tt trans.	**pattɛ** shout at—;	caus. **kɔtte** take for a walk;
Ts caus.	**paiɕu** (he) made—shout;	intr. **koisje** go for a walk.

Vowel-initial junction in English and French, for comparison

In stating the exponents of the t term of the three-term final system (t, s, z) and the seven phonematic units P, K, T, Ø, M, Ŋ, and N that can be distinguished in it (table 6) I have given priority to the vowel-initial type of junction, in which the word contains a suffix that has an initial syllabic vowel; this is because this type of junction best provides phonetic criteria for distinguishing the t term from the s and the z. A brief digression into English and French may help to make the analysis of the Bantawa clearer.

Vowel-initial junction in English, in which a following lexical item begins with a syllabic vowel (**V**), provides an important phonetic criterion, **ɹ**, for distinguishing a r prosodic type of lexical-item final from two other prosodic types, v (so named from the initial letter of *vowel*) and c (so named from the initial letter of *consonant*); e.g.

	interverbal junction	*intraverbal junction*
r-final piece:	**-ɪəɹ V-** hear it;	**-ɪəɹV-** hearing;
v-final piece:	**-əɷ: V-** show it;	**-əɷ·V-** showing;
c-final piece:	**-əɷt V-** float it;	**-əɷtV-** floating.[6]

Table 7: *Vowel-initial junction in English, for comparison*

Consonant-initial junction in English, on the other hand, in which a following lexical item has an intitial consonant (**C**), does not provide that phonetic criterion, **ɹ**, for the r-piece type of lexical-item final, as against the v and the c types, because the r-final piece ends not in **ɹ** but in a vowel (e.g. **ɪə:**; cf. also Bantawa, table 11); e.g.

	interverbal junction	*intraverbal junction*
r-final piece:	**-ɪə: C-** hear them;	**-ɪə·C-** hearsay;
v-final piece:	**-əɷ: C-** show them;	**-əɷ·C-** showpiece;
c-final piece:	**-əɷt C-** float them;	**-əɷtC** floats.

Table 8: *Consonant-initial junction in English, for comparison*

Similarly, in French, vowel-initial junction, in which the following lexical item begins with a syllabic vowel, provides a phonetic criterion for distinguishing a c-final prosodic class of lexical item (c from *consonant*);[7] e.g. *les*, *trop*, *est*, where consonant-initial junction fails to provide that prosodic class with a criterion; e.g. (i. vowel-initial junction; ii. consonant-initial junction)

		c-final piece	
(i)	**-ez V-** les hommes;	**-ɔp V-** trop idiot;	**-ɛt V-** il est ici;
(ii)	**-e C-** les femmes;	**-ɔ/o C-** trop grand;	**-ɛ C-** il n'est pas.

Table 9: *Vowel-initial and consonant-initial junction in French*

It is thanks to vowel-initial junction that the lexical items *les*, *trop*, and *est* can be prosodically classified as c-final.

Again, in English, vowel-initial junction within words provides phonetic justification for the phonologically justified *-mn* spelling of such cluster-final lexical items as *column* and *solemn*: in (i) vowel-initial intraverbal junction they have a final consonant cluster (**mn**), but only a single final consonant (**m**) in (ii) consonant-initial intraverbal junction and in (iii) interverbal junction; e.g.

(i)	**-mnV-** solemnity, solemnize;	columnist, columnal
(ii)	**-mC(-)** solemnly, solemnness;	columns, columned
(iii)	**-m V-** solemn oath;	column after column.

Table 10: *-mn in three types of junction in English*

Throughout this analysis I have followed the principle of maintaining the phonological identity of a given lexical item through all its chameleon-like variation in phonetic form, even where this leads to phonetic overlapping between lexical items, in an attempt to arrive at a single phonological formula for each lexical item such that it shall represent all phonetic variants equally; commonly, no doubt for historical reasons, that phonological formula approximates, in written languages, to a single orthographic form, e.g. the single

[6] cf. Sprigg, to appear, 'Types of r (prosodic) piece in a Firthian phonology of English, and their vowel and consonant systems'.

[7] This type of junction, vowel-initial junction, does not extend to junction in which a following vowel-initial lexical item belongs to the 'h aspiré' class (Armstrong, 1932: 167); e.g. *les haricots* (**-e V-**; Passy, 1914: 85), not ***-ez V-**; the 'h aspiré' type of junction forms a third class, h junction, neither vowel-initial nor consonant-initial.

orthographic forms of the English lexical items *hear* (**-ɪəɹ/-ɪə**), *column* and *solemn* (**-mn/-m**), the French lexical items *les* (**-ɐz/-ɐ**), *trop* (**-ɔp/-ɔ/-o**), and *est* (**-ɛt/-ɛ**), and more especially the Bantawa, in tables 6, 18, and 23. Often a phonological-formula type of analysis has the advantage of bypassing problems that arise from giving undue significance to syllable structure; it is in a direct line of descent from the morphophonemic type of analysis first referred to in Swadesh, 1934 (129; 1957: 37): ' one may devise a morphologic writing to use in morphological discussion or in a dictionary '.[8]

2. *Junction of the verb root with a consonant-initial suffix*

In Limbu, consonant-initial junction, in which a following lexical item within the word (commonly a suffix) begins with a consonant (**C-**; cf. also the English and French examples in tables 7, 8, 9, and 10) fails to supply criteria for distinguishing Limbu t-final-piece, s-final-piece, and z-final-piece categories of root (Sprigg, 1966: 437); this is also the case with consonant-initial junction in Bantawa: the phonetic exponents of the t term of the three-term final system (t, s, z) are, in consonant-initial junction, not the lexical-item-final clusters **-pt, -mt,** etc. that were stated as its phonetic exponents, as regards P, K, T, Ø M, ŋ, and N in vowel-initial junction (section (1) above, tables 4 and 6) but single consonants:

	P	K	T	Ø	M	ŋ	N	
(a)	**-p**	**-k**	**-t**	**-t**	**-m**	**-ŋ**	**-n**	**N-**
(b)	**-b**	**-g**	**-d**	**-d**	**-m**	**-ŋ**	**-n**	**d-**

e.g.

(a)	**ʔepŋa**	**lekŋa**	**mɔtma**	**itŋa**	**damma**	**dɔŋŋa**	**phuma**
(b)	**masjɛbde**	**matɕhagde**	**mafiɔdde**	**maɪdde**	**ma(w)amde**	**mad/rɔŋde**	**marʏnde**

Table 11: *Phonetic exponents of t, etc., in consonant-initial junction*

Glosses

(a) I winnow; I lick it; to blow; I laugh at—; to brand; I drink it for—; to jump;
(b) do not sharpen it; do not lock up; do not get tired; do not laugh at—; do not scratch it; do not drink it for—; do not rub it.

Within the consonant-initial-junction piece a further distinction has to be made to account for variation in voicing, whence (a) voicelessness piece and (b) voice piece, appropriate to stop consonants.

(*a*) *Voicelessness piece*

The examples at (a) in table 11 will also serve for the voicelessness piece; this type of piece is so named after the voicelessness that is one of the phonetic exponents of P, K, T, and Ø (**-p -k -t -t**). The voicelessness feature is syntagmatically linked to nasality as an initial feature of the following con-

[8] I have, however, preferred the term *lexical item* to *morpheme*, because I should not wish to follow Harris, 1942/1957 in, for example, identifying *-en*, as in *oxen*, with /-əz/, /-s/, and /-z/ as four alternants of a single morpheme ' plural ' (1957: 114); he manages to do this through mixing lexical with phonological grounds: the distribution of *-en* is lexically determined, while that of /-əz/, /-s/, and/-z/ is phonologically determined, through a threefold difference in junction. I should not wish to confuse lexical distribution with phonological distribution, and should keep *(e)s*, as in *cats*, *dogs*, and *fishes*, separate from *en*, as two different lexical items, (i) **s/z/ɪz**, and (ii) **ən/ɪn**, with the common grammatical function ' plural ', but different phonological formulae.

I first met, and learnt to appreciate, ' morphologic ' (or morphemic) spelling in Stewart, 1936, in his use of the final symbols ' **ŋ** ' and ' **ʔ** ': ' **ŋ** ' symbolizes **˜/n/m/ŋ**; e.g. `paŋ`o, `paŋna, `paŋ, according to junction; and ' **ʔ** ' symbolizes **ʔ/k/p/n**, etc.; but he has not extended this use to initials: he writes `paŋdaiŋ, eiŋ`dɛ, ywa`ða rather than `paŋtaiŋ, eiŋ`thɛ, and ywa`θa (4–5).

sonant, e.g. **ŋ-** and **m-**, the initial consonant of the suffix lexical items **ŋa** and **ma** (table 11); it also appears to be associated with a slightly closer degree of aperture in preceding front vowels (**-i- -e-**) than is characteristic of the voice piece (**-ɪ- -ɛ-**, as at (*b*) below). The nasal-initial suffixes **ŋa** and **ma**, 1st-person intransitive subject or 1st-person transitive object, and infinitive respectively, can, therefore, be classified as voiceless-piece suffixes: they are confined to the voiceless piece; e.g.

ŋa: **ʔepŋa, dɷŋŋa; ma**: **mɷtma, damma**

Table 12: *Voicelessness-piece suffixes* (for glosses see table 11)

(*b*) *Voice piece*

The voicelessness feature characterizing P, K, T, and Ø in the voicelessness piece (**-p -k -t**) at (*a*) above alternates with voice (**-b -g -d**) in what I have therefore termed the voice piece (table 11) (b)). In the voice piece voice, as a phonetic exponent of t and of the phonematic units P, K, T, and Ø, is syntagmatically linked to voice combined with plosion (**d-**) as an initial feature of the following consonant, which is the initial consonant of the negative suffix **de**, together with a slightly greater degree of aperture in the front vowels (**-ɪ- -ɛ-**; cf. table 11, (b)):

P	K	T	Ø	
-bd-	**-gd-**	**-dd-**	**-dd-;**	e.g.
masjɛbde	**matɕhɛgde**	**mafiɔdde**	**maɪdde**	

Table 13: *The voice piece* (for glosses see table 11)

The negative suffix **de** can be classified, from its relationship with the voice piece, as a voice-piece suffix.

In consonant-initial junction, therefore, the t term of the final system shows an alternation of voicelessness and voice as regards its phonematic units P, K, T, and Ø (**-p/b -k/g -t/d**), the two features being complementarily distributed in relation to type of junction, voiceless piece *v.* voice piece; so the features voicelessness and voice can be treated as a function of type of piece, P, K, T, and Ø being, in themselves, neither voiced nor voiceless:

(a) voiceless piece: **-pN- -kN- -tN- -tN-**
(b) voice piece: **-bd- gd- -dd- -dd-**.

As regards its three remaining phonematic units, however, M, ŋ, and N, the t term has voice as its constant feature (**m ŋ n**) in (a) the voiceless and (b) the voice piece alike; for there is no alternation of voicelessness with voice when combined with nasality (unlike Burmese, for example, voiceless nasals do not occur in Bantawa).

Nasal piece v. *stop piece*

A preceding front vowel has the more open quality, ɪ or ɛ rather than **i** or **e**, in combination with nasality as a feature of the following consonant; this relationship can be expressed as characteristic of (c) a third type of piece, the nasal piece, ɪ or ɛ followed by **m/ŋ/n**, as against (d) a contrasting stop piece, in which ɪ or **e** is linked to a voiceless stop, **p/k/t**.

3. *Junction of the verb root with a non-syllabic-vowel-initial suffix*

Where a Bantawa word contains a suffix beginning with a non-syllabic vowel (**j**) immediately following the verb root, the phonetic exponents of the t

term of the root's final system are slightly different from those given at (2) above for a consonant-initial suffix. The most striking difference is that of a glottal plosive (ʔ) for root finals in T and Ø; but there is also nasalization (˜) for the N final, and plosion rather than occlusion for the P and K finals:

	P	K	T	Ø	M	ŋ	N	
	-p/b	**-k/g**	**-ʔ**	**-ʔ**	**-m**	**-ŋ**	**-ĩ/˜**	**j-**
e.g.								
(a)	**ʔipjaŋ**	**kakjaŋ**	**sjeʔjaŋ**	**iʔjaŋ**	**ʔɷmjaŋ**	**təŋjaŋ**	**tsaĩjaŋ**	
(b)	**fiabjaŋ**	**waɡjaŋ**	**waʔjaŋ**	**ʔeʔjaŋ**			**phĩjaŋ**	

Table 14: *t, P, K, etc., in non-syllabic-vowel-initial junction*

Glosses

(a) He is putting—to sleep; he is jumping over; he is telling—to kill; he is laughing at—(he is bringing—down); he is sucking—; he is chasing—away; he is feeding/grazing—;

(b) he is tripping up; he is bringing—inside; he is wearing—; he is defecating on—; he is jumping.

The verbal suffix **jaŋ** in the examples in table 14 is the 3rd-person-singular-subject present continuous.

As in consonant-initial junction at (2) above the phonetic exponents of Tt and Øt are identical: **ʔ**.

The phonetic exponent of Nt varies according as the syllabic vowel is (i) front, or (ii) central or back:

(i) nasalization as a feature of the syllabic vowel: **ĩ ẽ**;
(ii) nasalized front post-syllabic (or glide) vowel: **ɤĩ aĩ uĩ oĩ**.

The sequence **uĩ** has been observed to alternate, in fast-tempo utterances, with a single vowel, the front rounded vowel **ỹ**:; e.g. **kuĩjaŋ/kwỹjaŋ** ' it is choking him '.

Voice, rather than voicelessness, has, on occasions, been observed in association with bilabial and with velar plosion (glottal plosion cannot be voiced), as in the examples given at (b) above for P and T. I take this voice feature to be a fast-tempo feature, matching the voice feature of the following sound; so that voice becomes a feature of the junction as a whole: **-bj -ɡj-**. The two features voicelessness and voice are, therefore, in complementary distribution, in accordance with a difference in style.

4. *Interverbal (or word-final) junction; no suffix*

In the remaining type of junction, interverbal junction, in which there is no suffix, and the verb root is itself final in the word, the exponents of t are, again, a set of single lexical-item-final consonants, exactly the same as for consonant-initial junction, at (2) above:

	P	K	T	Ø	M	ŋ	N	
	-p	**-k**	**-t**	**-t**	**-m**	**ŋ**	**-n;**	e.g.
(a)	**ʔep**	**lek**	**mɷt**	**it**	**dam**	**dɷŋ**	**phun**	
(b)	**ʔip**	**ka:k**	**sjet**	**ʔet**	**ʔɷm**	**təŋ**	**tsan**	
			wat					

Table 15: *Phonetic exponents of t; interverbal junction*

Glosses

(a) he winnows it; he licks it; he blows it; he laughs at—(he brings—down); he brands it; he drinks it for—; he jumps;

(b) he puts—to sleep; he jumps across; he tells—to kill; he defecates on—; he sucks it; he chases it away; he feeds—; he wears it.

I will conclude this section on the t term of the final system and its piece by summarizing the phonetic exponents of t in all five types of junction, and, simultaneously with it, the seven phonematic units P, K, T, Ø, M, Ŋ, and N; so that these can be seen at a glance: (1. syllabic-vowel-initial junction; 2. consonant-initial junction: (a) voiceless piece; (b) voice piece; 3. non-syllabic-vowel-initial junction; 4. interverbal junction)

	P	K	T	Ø	M	Ŋ	N	
1.	**-pt**	**-kt**	**-tt**	**-tt**	**-mt**	**-ŋt**	**-nt**	**V-**
2a.	**-p**	**-k**	**-t**	**-t**	**-m**	**-ŋ**	**-n**	**N-**
2b.	**-b**	**g**	**-d**	**-d**	**-m**	**-ŋ**	**-n**	**d-**
3.	**-p/b**	**-k/g**	**-ʔ**	**-ʔ**	**-m**	**-ŋ**	**-˜/ĩ**	**j-**
4.	**-p**	**-k**	**-t**	**-t**	**-m**	**-ŋ**	**-n**	

Table 16: *t and P, K, etc.: summary of phonetic exponents* (for supporting examples see tables 6, 11, 14, and 15)

Table 16 comprises a total of thirty-five phonetic exponents of the t member of the three-term final system (t, s, z), seven exponents for each of the five different types of junction (1, 2a, 2b, 3, 4), of which eighteen exponents are phonetically different; it also gives five phonetic exponents each for the seven terms of the phonematic system, P, K, T, Ø, M, Ŋ, and N, of which between two and four are phonetically different.

B. The s term and the phonematic system

1. *Junction of the verb root with a syllabic-vowel-initial suffix*

In vowel-initial junction the function of the s member of the three-term final system, t, s, and z, is to associate a voiceless fricative, either alveolar or alveolo-palatal as regards its place of articulation (**s ɕ**), with an appropriate preceding consonant, or with a syllabic vowel or a vowel sequence, in a s (or sibilant) lexical-item-final piece. The range of phonetic features of that preceding consonant is much more limited than that of the t piece (section (A. 1) above and, incidentally, much more limited than the Limbu s piece.[9] Four of the s-piece phonematic units have nasality as a feature (**m ŋ**); the remaining three have length as a feature of the preceding syllabic vowel (though this vowel has, on occasions, been observed to be short) or a post-syllabic (glide) vowel **i**, as follows:

(i)	**m, ŋ**	with **s(j)**,	as in **-ms(j), -ŋs(j)**
(ii)	**V(:)/Vi**	with **ɕ**,	as in **-V(:)/Viɕ**
(iii)	**V(:)**	with **s, sj**,	as in **-V(:)s(j)**[10]

→ **V-**

Table 17: *Phonetic exponents of the s term, in vowel-initial junction*

[9] cf., for the s piece in Limbu, Sprigg, 1984/5: 11–21, 1–9, respectively.

[10] Where I have noted variation in length of vowel in the same type of junction, both V and V:, I associate the length feature with emphasis. Emphasis is to be expected in the type of situation in which one is eliciting material from an informant, because he is constantly being asked to compare and contrast particular lexical items with others.

The following examples of Ps, Ks, Ms, ŋs, Ts, Ns, and Øs illustrate the s piece:

P	M	K	ŋ	T	N	Ø	
-ms	**-ms**	**-ŋs**	**-ŋs**	**-(ː)ɕ**	**-(ː)ɕ**	**-(ː)s**	**V-**
				-iɕ	**-iɕ**		
khamse	**ʔɷmsje**	**tsaŋsje**	**dɷŋsje**	**tɕhe(ː)ɕa**	**pe(ː)ɕu**	**pe(ː)sa**	
ʔumsaŋ	**namse**	**fiɔŋsje**	**phɔŋsje**	**lfioiɕɷŋ**	**bfiuiɕɷŋ**	**ʔeːsje**	

Table 18: *s-final piece in verb roots; syllabic-vowel-initial junction*

Glosses
Make—cry; suck it; bath—; offer a drink to—; he urinated; he flew (a kite); he vomited;
I slept; smell it; open it; undo it; I made—run; I refused it; defecate!

Identical phonetic exponents for Ps and Ms, Ks and ŋs, and Ts and Ns

Table 18 shows Ps as having exactly the same phonetic exponents as Ms; and, similarly, Ks has the same phonetic exponents as ŋs, and Ts as Ns. P and M have labial nasality in common, and K and ŋ have velar nasality in common. One might have expected T and N to have alveolar nasality in common; and it is probable that at an earlier stage of the language they did indeed have alveolar nasality, or at least nasalization, in this type of junction, the syllabic-vowel-initial type, just as they still have in other types of junction:

(i) alveolar	conson.-init. junc. (**C-**), table 19
nasality (**n**):	interverbal junction, table 21
(ii) nasalization (˜):	non-syll.-vow-init. junc. (**j-**), table 20.

I assume three stages of phonetic development for Ns and Ts:

Ns: **peːɕu** < ***pɛ̃ːɕu** < ***pɛnsu** 'he flew it'
Ts: **lfioiɕɷŋ** < ***lfioĩɕɷŋ** < ***lfiɔnsɷŋ** 'I made—run'.

The only surviving evidence for nasality or nasalization in syllabic-vowel-initial junction is the fact that the Ns and Ts examples are distinguished from Ps, Ms, Ks, ŋs, and Øs examples (i) by alveolo-palatality versus alveolarity (**ɕ** *v.* **s(j)**), and (ii) by a close front spread glide vowel (**i**) following the syllabic vowel for syllabic vowels that have a feature other than frontness (**ui ai oi**), but vowel length, usually, where the syllabic vowel is front, e.g. **e(ː)**.

Since P, K, and T have identical phonetic exponents, respectively, with M, ŋ, and N, clearly the criterion for distinguishing them cannot be phonetic. That criterion is, in fact, the same as was used in the t-final piece, at (A) above, for distinguishing Ø from T (tables 6, 16), a grammatical criterion: an association of transitive with intransitive, causative with non-causative, or benefactive with non-benefactive; e.g.

i. s and z	
Ps caus.	**khamse** make—cry; tr. **ɛmsje** stand—up;
Pz intr.	**khap** he cries; intr. **eːp** (he) stands up;
Ks tr.	(**waː**) **tsaŋsje** bath him; ?caus. **fiɔŋsje** have—opened;
Kz intr.	(**waː**) **tsauje** have a bath; ?tr. **fioːje** open it;
Ts tr.	**tsoiɕu** he sprinkled—; caus. **lfioiɕu** he made—run;
Tz intr.	**tsoɾa** it dripped; int. **lfioːt** he runs;
ii. s and t	
Ps intr.	**ʔumse** sleep! caus. **thɔmsje** keep a priest;
Pt caus.	**ʔipte** put—to sleep; intr. **thɔpte** behave like a priest

Ks tr.	**rʏŋsje** spin—round; non-ben. **fiɔŋsje** have—opened;
Kt intr.	**rʏkta** it got twisted; ben. **fiɔkte** open it for—;
Ts intr.	**tɕhe:sje** urinate! caus. **paisje** make—shout at;
Tt trans.	**tɕhɛtte** urinate on—; tr. **patte** shout at.

Corresponding grammatical relationships to those shown above for Ps, Ks, and Ts can also be found for Ms, ŋs, and Ns; e.g.

i. s. and z	
Ms tr.	**namse** smell (it); **jɔmsje** starve (it);
Mz intr.	**na:me** smell; **jo:ma** (he) starved;
ŋs caus.	**dɷŋsje** offer a drink to—; **thaŋsje** bring—up;
ŋz tr.	**duŋe** drink (it); **tha:ŋe** come up;
Ns tr.	**pe:sje** fly it; **poisje** save (money);
Nz intr.	**pɛn** (he) flies; **po:n** (he) grows big;
ii. s and t	
Ms tr.	**pɷmsje** bend (it); **ʔɷmsje** suck (it);
Mt tr.	**pɷmte** bend (it); **ʔɷmte** suck (it);
ŋs non-ben.	**dɷŋsje** offer a drink to—;
ŋt ben.	**dɷnte** drink it for—;
Ns caus.	**loisje** take—out;
Nt intr.	**loɔnte** go out

2. *Junction of the verb root with a consonant-initial suffix*

In this type of junction the phonetic exponents of s are, in contrast with the consonant clusters of (1) above, either single consonants (cf. also, for t, (A. 2) above) or a single vowel:

	P	M	K	ŋ	T	N	Ø	
	-m	**-m**	**-ŋ**	**-ŋ**	**-n**	**-n**	**-V(:)**	**C-**
e.g.								
(a)	**khamŋa**	**ʔɷmŋa**	**tsaŋŋa**	**dɷŋŋa**	**lfiɔnŋa**	**pɛnŋa**	**le:ŋaŋa**	
(b)	**makhamde**	**maɷmde**	**matsaŋde**	**majɷŋde**	**malfiɔnde**	**mapɛnde**	**maped/ɾe**	

Table 19: *Phonetic exponents of s, etc., in consonant-initial junction*

Glosses

(a) I make—cry; I suck (it); I bath (him); I offer a drink to—; I make—run; I fly it: I know;

(b) do not make—cry; do not suck it; do not bath him; do not put it down; do not make—run; do not make it fly; do not vomit.

It is noteworthy that T and N, the phonetic exponents of which are non-nasal in vowel-initial junction (**-ːɛ**; table 18), include nasality (**n**) in this type of junction, in common with nasality as an exponent of P and M and of K and ŋ (**m ŋ**); the phonetic exponents of Ø, however, which are consonantal in syllabic-vowel-initial junction (**-s**; (1) above), are entirely vocalic in this type of junction: **-i**, **-ə/ʏ**, **-u**, **-e**, **-a**, **-o**, possibly with length as an emphasis feature.

3. *Junction of the verb root with a non-syllabic-vowel-initial suffix*

The phonetic exponents of s in this type of junction show only slight difference from the consonantal-initial type of junction, at (2) above; indeed the phonetic exponents of five of the phonematic units, P, M, K, ŋ, and Ø, are identical:

P	M	K	ŋ	T	N	Ø	
-m	**-m**	**-ŋ**	**-ŋ**	**-ĩ**	**-ĩ/˜**	**-V(:)**	**j-**
e.g.							
khamjaŋ	**namjaŋ**	**tsaŋjaŋ**	**dɔŋjaŋ**	**lfiɔĩjaŋ**	**pẽjaŋ**	**le:aŋ**	
ʔimjaŋ	**jɔmjaŋ**	**fiɔŋjaŋ**	**phɒŋjaŋ**		**bfiuĩjaŋ**	**pe(j)aŋ**	

Table 20: *s, P, M, etc., in non-syllabic-vowel-initial junction*

Glosses
He is making—cry; he is smelling (it); he is bathing (him); he is offering—a drink; he is making—run; he is flying (it); he knows;
he is sleeping; he is starving (it); he is opening it; he is undoing it; he is refusing it; he is getting sick.

From a comparison of table 20 with tables 19 and 18 it will be seen that the phonetic exponents of s as regards its phonematic units T and N differ in having nasalization in this type of junction, as opposed to nasality in consonant-initial junction (table 19) and orality in vowel-initial junction (table 18).

4. *Interverbal (or word-final) junction; no suffix*

In this type of junction the phonetic exponents of the s prosodic term and those of the s-piece phonematic units P, M, K, ŋ, T, and N are the same as for consonant-initial junction (at (2) above); as regards Ø, length is regularly a feature of this type of junction:

P	M	K	ŋ	T	N	Ø	
-m	**-m**	**-ŋ**	**-ŋ**	**-n**	**-n**	**-V:,**	e.g.
kham	**nam**	**tsaŋ**	**dɔŋ**	**lfiɔn**	**pɛn**	**khə:**	
ɯm	**jɔm**	**fiɒŋ**	**phɒŋ**	**tsɔn**	**bfiɑn**	**pe:**	

Table 21: *Phonetic exponents of s; interverbal junction*

Glosses
He makes—cry; he smells (it); he baths (him); he offers—a drink; he makes—run; he flies; he steals—;
he sleeps; he starves; he opens—; he undoes—; he sprinkles—; he refuses—; he gets sick.

I will conclude this section by recalling the various phonetic exponenets of s, and its component phonematic units, P, M, K, ŋ, T, N, and Ø:

	P	M	K	ŋ	T	N	Ø
1.	**-ms(j)**	**-ms(j)**	**-ŋs(j)**	**-ŋs(j)**	**-i/(:)ɐ**	**-i/:ɐ**	**-(:)s V-**
2.	**-m**	**-m**	**-ŋ**	**-ŋ**	**-n**	**-n**	**-(:) C-**
3.	**-m**	**-m**	**-ŋ**	**-ŋ**	**-ĩ/˜**	**-ĩ/˜**	**-: j-**
4.	**-m**	**-m**	**-ŋ**	**-ŋ**	**-n**	**-n**	**-:**

Table 22: *s and P, M, etc.: summary of phonetic exponents* (for supporting examples see tables 18–21).

C. The z term, and the phonematic system

1. *Junction of the verb root with a syllabic-vowel-initial suffix*

The function of the other two terms of the three-term final system, the t and s terms, in this type of junction was to state the syntagmatic relations of (i) a plosive or nasal consonant (**p k t m ŋ n**) with a following voiceless alveolar plosive (**t**; (A. 1)) or (ii) a nasal consonant (**m ŋ**) or a vowel, syllabic or post-syllabic (**V i**), with a following sibilant (**s ɐ**; (B. 1)), within the final of the verb-root lexical item; in marked contrast with these two terms the function of the remaining term, z, is (a) to associate a single final consonant or a non-syllabic

vowel or a post-syllabic vowel in the root with the syllabic vowel of that root (**V**), or (b) to link a final syllabic vowel with the initial sound of the following lexical item. The major difference, therefore, between the z term and the t and s terms is that these two latter are concerned with final consonant clusters, entirely concerned with clusters in the case of the t term, and for the most part concerned with clusters in the case of the s term, while the z term is concerned with single final consonants and final post-syllabic vowels and non-syllabic vowels, and, in the case of Ø, with a final syllabic vowel.

The phonetic exponents of z in this type of junction, and the phonetic exponents of five of its phonematic units, P, K, T, N, and Ø, show variation in exponency, for P, K, and Ø at (a) (i)–(iii), for T and N at (a) (i) and (a) (iii), and, more problematically, an alternative set of exponents for T and N at (b):

		P	K	T	N	Ø	M	ŋ	
(a)	(i)	**-Vw**	**-Vw**	**-V(:)j**	**-V(:)j**	**-V(:)**	**-Vm**	**-Vŋ**	V-
	(ii)	**-Vuj**	**-Vuj**			**-Vj**			
	(iii)	**-V:j**	**-V:j**	**-V:**	**-V:**	**-V(:)**			
(b)				**-Vr**	**-Vn**				
e.g.									
(a)	(i)	**ewa**	**jawaŋ**	**lfio(:)ja**	**po(:)ja**	**i(:)a**	**na:maŋ**	**duŋa**	
	(ii)	**lauje**	**wauje**	**lfio:je**	**po:e**	**puje**	**tshə:me**	**duŋe**	
	(iii)	**ʔju:je**	**ʔu:je**	**la:e**	**pe:**	**ta(:)e**			
(b)				**sere**	**bane**				

Table 23: *z-final piece in verb roots; syllabic-vowel-initial junction*

Glosses

(a) (i) he stood up; I stayed; he ran; it grew big; he laughed; I stank; they drank;
(ii) catch it; chase it away; run; grow big; give him it; make—lower the price; drink it;
(iii) hide it; peel it; drag it; fly; come here;
(b) kill it; come here.

(a) P, K, and T: vocalic phonetic exponents

Table 23 is conspicuous, as compared with tables 6 and 18, for having no root-final plosives; but a comparison of the vowel-initial type of junction, illustrated in table 23, with consonant-initial junction, in table 30, at (2) below, suggests that P, K, and T formerly each had a consonantal phonetic exponent, **p**, **k**, and **t** respectively, as in that table. One may guess, then, that in vowel-initial junction ***p**, ***k**, and ***t** in an earlier stage of the language have developed into (i) **w** and **j**, (ii) **u**, and (iii) length of vowel (:), in harmony with the following initial vowel of the suffix. The process may have been somewhat as follows:

P: **lauje**	< **laße**	< **laube**	< **laupe**	< **lape**
K: **wauje**	< **wauɣe**	< **wauge**	< **wauke**	< **wake**
T: **laije/la:je**	< **laire**	< **laide**	< **laite**	< **late** [11]

Table 24: *Development of vocalic phonetic exponents*

Three of these presumed developments can be supported from within Bantawa.

(i) The development of a post-syllabic, or glide, front vowel (**i**) like that proposed for T in table 24 can be found in the neighbouring Bantawa dialect of Khawa in association with ʔ (from ***t**), as opposed to that of Dilpa:

[11] For the development of a somewhat similar glide vowel (**a**), but in association not with **p**, **t**, and **k** but with **ɬ**, cf. *beaux*, in French: '**bɛɬos** > **bɛɬz** > **bɛəɬz** > **bɛʊ** > **bo**' (James, 1929: 125).

'Dilpa	Khawa	gloss
set	seiʔ	he kills
dot	doiʔ	he begs
pɯt	pɯiʔ	he bathes' (Michailovsky, 1979: 324).

(ii) A tendency to develop voice in harmony with the voice feature of a following vowel can be seen from **b** and **g** in the alternation of voice, as a fast-tempo alternative in harmony with voice as a feature of the following non-syllabic vowel (**j**) in the P and the K columns of table 31 (see (3) below).

(iii) The development of a tap articulation (**r**) as an alternative to plosion (**d**) can be seen in the pronunciation of the initial consonant of the negative suffix with a tap following a vowel (**-Vre**) as opposed to its pronunciation with plosion following a consonant (**-Cde**), in table 30, e.g. **matsore**, not ***matsode** (cf. **-bde** in **malabde**).

Whatever the details of the process may have been historically, the outcome is that P, K, and T now have vocalic phonetic exponents, and that, further, these vocalic exponents are in complementary distribution with consonantal phonetic exponents: vocalic exponents in vowel-initial junction, but consonantal exponents in consonant-initial junction (in (2) below), in non-syllabic-vowel-initial junction (in (3) below), and in interverbal junction (in (4) below).

The position of certain N roots as regards having vocalic exponents in complementary distribution with consonantal phonetic exponents is the same as for T, P, and K (table 23, lines (a) (i) and (a) (iii) as compared with tables 30, 31, and 32).

This alternation in phonetic exponency between vowel and consonant, in complementary distribution, draws these two phonetic categories into a very close relationship, in order to satisfy the needs of Bantawa phonology. In phonetics, on the other hand, the vowel category and the consonant are treated as being poles apart from each other; [12] but the phonology of a language can bring them very close together, having the same phonetic function, as alternative exponents in complementary distribution, for, in this case, Bantawa P, K, and T.

(*b*) Variation in exponency by tempo (P, K, T, Ø)

The phonetic exponents shown for P, K, T, N, and Ø at (a) (i) of table 23 apply to declarative forms; those at (a) (ii)–(iii) apply to imperative forms. The former need no further comment; but the imperative forms show some variation in exponency according to tempo and according to features of the syllabic vowel of the root. In table 25, which illustrates this variation in imperative forms, I take the second of a pair of alternative phonetic forms to be a fast-tempo form, in complementary distribution, stylistically, with the first form:

	I	E	Y	A	O	U
P:	**ʔju:je**	**tjeuje/tjoje**		**lauje**	**ɾouje/ɾo:je**	**thu:je**
K:		**ljeuje/ljəuje**	**bʏuje/bɯ:je**	**wauje**	**fio:je**	**ʔu:je**
T:				**laje/la:e**	**lfio:je**	
cf.						
Ø	**i:je**		**pɯje**	**ta(:)e** [13]	**lo:je**	**tu:je**

Table 25: *P, K, and T; tempo variation*

[12] cf. Pike, 1943: 'the most basic, characteristic, and universal division made in phonetic classification is that of consonant and vowel' (66), and Catford, 1977: 'most of the older works on phonetics present the distinction between vowel and consonant as absolutely basic' (165).

[13] But **ba(:)je** 'knit it' has an alternative form **bo:je/boe**.

Glosses
P: conceal it; wash it; catch it; snap it; sew it;
K: lick it; sweep it; chase it away; open it; peel it;
T: take it out; run;
Ø: laugh; give him it; come here; tell him; dig.

The exponents for -IP and for -EP and -EK vary in accordance with the degree of prominence of I and E: where I or E has the high degree of prominence, it is syllabic (**i e**), and a post-syllabic vowel (**u**) follows; where, on the other hand, I or E has the low degree of prominence, it is non-syllabic (**j**), and a syllabic vowel, sometimes long, follows: **-ju(:)- -jo(:)-**; in the case of -EP that syllabic vowel may maintain half-closeness (**o**), as opposed to the closeness (**u**) of the corresponding syllabic vowel for -IP.

Phonetically the same alternation of features, **-eu** with **-jo:**, can be observed in the grammatically and lexically different word **leu/ljo:** (declarative) ' he let it go '.

Where the vowel unit in (iii) of table 23 and the U column of table 25 is U, it is, naturally, impossible to distinguish the post-syllabic vowel from the syllabic vowel; and a long vowel is to be heard, **-u:** not **-uu**; similarly, in fast tempo, a single long vowel (**-o:**) suffices for -OP and -OK, as an alternative to **-ou**.

Somewhat similarly, in (iii) of table 23, but within a two-lexical-item word, **pe:** ' fly! ', instead of within a single lexical item, a single long vowel, **-e:**, supplies the phonetic exponents not only of the imperative suffix but also of the verb root (-EN), with the result that a single syllable, **pe:**, represents the two lexical items PEN and E, not ***pee** or ***peje**.

The non-syllabic vowel (**j**) is also not to be heard, in fast tempo, in open-vowel words exemplifying such roots as LAT and TAØ (table 23, (a) (iii), and the A column of table 25), where length of vowel alternates with it (**-a(:)/-aj**).

(*c*) *Alternative phonetic exponents for T and N (transition)*

My data in table 23 contain two distinct sets of phonetic exponents for T and N:

(a) (i) (long) syllabic vowel (and non-syllabic vowel);
(a) (iii) long vowel; but
(b) for T, alveolar tap (**ɾ**), and, for N, alveolar nasal (**n**); e.g.
(a) T: **leu/ljo:, laje/la:e, lfio:je**
N: **tɕi:e, tɕhi:e, kwuje, po:e/poje, pe:**
(b) T: **seɾe, waɾe, tsoɾa, khiɾe, pəɾe, keɾe**
N: **bane, mine, ɛne, sjɛne, fiɛne, lɛəne**

Table 26: *T and N; alternative exponents*

Glosses
(a) T: (he) let it go; take it out; run;
N: finish it; tie it round; carry it; grow big; fly;
(b) T: kill it; wear it; it dripped; buy it; scrub yourself; crack it;
N: come here; think about it; listen to it; ask him; sacrifice it; thread it through.

It seems a reasonable hypothesis that the phonetic exponents shown for N at (a) (i) and (a) (iii) above, **-(:)j** and **-:**, are a development from those at (b) via **-Ṽ:j**; indeed all N lexical items, irrespective of whether they belong to the (a) type or the (b), have nasalization as a vowel feature in non-syllabic-vowel-initial junction (**-Vĩ**; (3) below), and in consonant-initial junction and interverbal

junction they have nasality (**-n**; (2) and (4) below). I take the development from nasality to orality to have been via nasalization, somewhat as follows:

N:	**poje/po:e**	< **põje**	< **pɔne**	' grow big! '
	pe: < **peje**	< **pẽje**	< **pɛne**	' fly! '

If so, the result is that for N in this type of lexical item the three phonetic features (1) orality (table 23), (3) nasalization (table 31), and (2) and (4) nasality (tables 30 and 32) are in complementary distribution by type of junction: (1) vowel-initial junction, (3) non-syllabic-vowel-initial junction, and (2) and (4) consonant-initial and interverbal junction respectively.

If, then, Bantawa Rai is currently in transition from one set of phonetic exponents of N to another, from nasality to orality, it is almost as though two ' états de langue ' were present in the language at one and the same time; but this is an impossibility by definition. There are, however, reasonable grounds for accepting both types as exponents for N, as double exponency, in fact, even though this will mean specifying the lexical items that have orality as the phonetic exponent of N (table 26; (a)) as against those which have nasality (table 26, (b)).

As regards T the phonetic processes by which a final voiceless alveolar plosive (**t**) may have developed into a vocalic feature (**j**) has already been considered at (a) above. Whether or not the process of phonetic development may have been historically as proposed there, table 26 leaves it in no doubt that there are two candidates for recognition as phonetic exponents of T, one of them, at (a), being vocalic, a voiced non-syllabic front spread vowel (**j**), and the other, at (b), being consonantal, a voiced alveolar tap (**ɾ**). Here, again, as with the corresponding (alveolar) nasal, I wish to accept both exponents as valid for T, assuming that a change is taking place within Bantawa that has so far affected only a small minority of T lexical items, the three shown at (a) in table 26.

In support of this treatment I would emphasize that T and N lexical items in table 26 can enjoy a grammatical relationship with a t or a s lexical item regardless of whether their phonetic exponency is of (a) the vocalic or (b) the consonantal type; e.g.

(a)	T	z	**lfio(:)ja**	he ran;	cf.	**lfio:t**	he runs;
		s	**lfioiɛu**	he made—run;	cf.	**lfiɔnŋa**	I shall make him run;
	N	z	**pe:**	fly;	cf.	**pɛn**	he flies;
		s	**pe:sje**	fly it;	cf.	**pɛnŋa**	I fly it;
(b)	T	z	**sere**	kill it;	cf.	**sɛt**	he kills it;
		t	**sjɛtte**	have it killed;	cf.	**sjɛt**	he gets it killed;
	N	z	**fiɛne**	sacrifice it;	cf.	**fiɛn**	he sacrifices it;
		s	**fie:sje**	set aside for;	cf.	**fiɛnŋa**	I save (food) for.

Table 27: *z-piece roots associated with s-piece and t-piece*

(*d*) *Joint phonetic exponency* (*coalescence of verb root and verbal suffix*)

With a very few exceptions, such as the imperative form **pe:** ' fly ', for PEN-E, and the declarative past-tense form **ljo:**, as a fast-tempo alternative to **leu** ' (he) let it go ', for LET-U, all the examples in this section (1) so far have been disyllabic; there is, however, a monosyllabic type of word that exemplifies both the verb root and a following suffix, the 1st-person-subject-and-3rd-person-object past-tense suffix, equally. In the t-piece and s-piece words (at (A) and (B) above) this suffix appears as a syllable, **ɷŋ**, e.g. (t) **təŋtɷŋ** ' I followed (her) about ', (s) **le:sɷŋaŋ** ' I knew it '; but in a z piece in which the phonematic

unit is P, K, or Ø (and also T in front-vowel roots), the verb root and the suffix coalesce phonetically to form a monosyllable; e.g.

P: **ʔiŋ**	**te:ŋ**		**laŋ:**	**thɷŋ**	**ɾoŋ**
K:	**le:ŋ**	**bɤŋ**	**waŋ:**	**ʔɷŋ**	**fioŋ**
T:	**le(:)ŋ**		**lajɷŋ**		

Table 28: *P, K, and T: 1st-person past-tense transitive suffix*

Glosses
P: I concealed it; I washed it; I caught it; I sewed it; I broke it;
K: I licked it; I swept it; I chased it away; I peeled it; I opened it;
T: I loosed it; I took it out; cf. also:

Ø: **pɤ:ŋ** **tsaŋ** **tɷŋ** **loŋ**;

I gave him it; I ate it; I dug it; I told him. (certain lexical items have **-oŋ** rather than **-aŋ: loŋ, boŋ, leŋ doŋ**; I plucked it; I knitted it; I left it).

In such instances it is not difficult to assign the initial consonant of the word, e.g, **ʔ, t, l**, to the verb root, and the final consonant, **ŋ**, to the suffix; but, except in disyllabic words such as the T-root example **lajɷŋ**, it is difficult to know how to divide up the various features of the syllabic vowel between the root and the suffix. Fortunately, it is not essential to divide up the features; the syllabic vowel (**i e(:) ɤ a ɷ o**) can be regarded as supplying phonetic exponents for the final of the verb root, -IP, -ET, -YK, etc., and for the initial vowel of the suffix, U-, jointly, from a monosyllable in which both are represented.

The following suffixes also coalesce with the final of the root, especially in a fast-tempo alternative, to form a monosyllable:

(i) 3rd-person-subject-and-object past (contrast with this its t-piece and s-piece form **-u**);
(ii) 1st-person-subject intransitive (contrast with this its t-piece and s-piece form **-aŋ**); e.g.

P:	**ʔjuŋu tjeu/tjo:**			**du:**		
K:	**ljəu**	**bɤu/bɤ:**		**ʔu:**		
T:	**ljəu/ljo:**					
Ø: (i)		**pɤ:**	**tsuo:/tso:**	**khu:**	**loo:/lo:** [14]	
(ii)			**dfiaŋ**			

Table 29: *Joint phonetic exponents, root and suffix*

Glosses
P: he was hiding it; he washed it; he made it;
K: it licked him; he swept it; he peeled it;
T: he set it free;
Ø: he gave it to him; he ate it; he chewed it; he told him; I fell down.

I suggest the following as the phonetic processes responsible for producing such monosyllables as these: (i. table 28; ii. table 29)

(i) LAP-Uŋ: **laŋ:** < **laaŋ** < **laɷŋ** < **laßɷŋ** < **labɷŋ** < **lapɷŋ**
(ii) LEK-U: **ljəu** < **leu** < **leɣu** < **legu** < **leku.**

If the phonetic exponents of P and K in tables 23, 24, and 25 are compared, they will be found to be phonetically identical or very nearly so. For criteria to

[14] **tsuo:/tso:**, not the expected form ***tsau**; correspondingly, **bo:** and **loo/lo:** respectively for ' he knitted it ' and ' he plucked it ', with lip-rounding throughout, not ***bau** or ***lau**.

distinguish P and K from each other, therefore, one must have recourse to features of their phonetic exponents in (2) consonant-initial junction, (3) non-syllabic-vowel-initial junction, and (4) interverbal junction: labiality versus velarity.

2. *Junction of the verb root with a consonant-initial suffix*

In order to substantiate my P-versus-K distinction, made in (1) above but not justified there phonetically, and also for the sake of completeness, I now proceed to the phonetic exponents of z and its phonematic units in consonant-initial junction (C-), especially where their phonetic exponents supply phonetic criteria for distinguishing P, K, T, and Ø. Where there is a following suffix beginning with a consonant, these phonetic exponents are:

	P	K	T	M	Ŋ	N	Ø	
(a)	**-p**	**-k**	**-t**	**-m**	**-ŋ**	**-n**	**-V(:)**	**ŋ-**
(b)	**-b**	**-g**	**-d**	**-m**	**-ŋ**	**-n**		**d-**
(c)							**-V**	**ɾ-**
e.g.								
(a)	**lapŋa**	**wakŋa**	**lfiotŋa**	**tshʏmŋa**	**dɒŋŋa**	**banŋa**	**pʏŋa**	
						pɔnŋa	**tsaŋa**	
						pɛnŋa	**sʏ(:)ŋa**	
(b)	**malabde**	**mawagde**	**malfiodde**	**matshʏmde**	**mad/ɾɒŋde**	**mabande**		
(c)							**matsoɾe**	

Table 30: *Phonetic exponents of z, etc., in consonant-initial junction*

Glosses

(a) he catches me; I chase it away; I run; I shall get the price reduced; I shall drink; I shall come; he gives me it; I shall grow big; I shall eat it; I shall fly; I shall die;

(b) do not catch it; do not drive it away; do not run; do not get the price raised; do not drink; do not come; do not eat it.

In this type of junction P, K, T, and Ø are all easily distinguished from each other, by labiality *v.* velarity *v.* alveolarity *v.* vocality (a. **p k t V**; b. **b g d**; c. **V**).

In section (A. 2) above, dealing with the t term of the final system, it was necessary to distinguish two types of voicing piece in relation to root-final occlusive consonants, as phonetic exponents of the four phonematic units P, K, T, and Ø; a corresponding distinction is necessary in the z piece, but only for the three phonematic units P, K, and T (there is no voicing alternation for Ø).

(*a*) *voicelessness piece*

The examples at (a) in table 30 will also serve for the voicelessness piece; they illustrate the syntagmatic association of voicelessness (**p k t**) as a feature of final occlusive consonants in the root lexical item with nasality (and voice; **ŋ**) as a feature of the suffix (**-pŋ- -kŋ- -tŋ-**; cf. also the t-final root at A. 2. (a) above).

(*b*) *voice piece*

Where voice combines not with nasality but with plosion as a feature of the initial of the suffix, as for the negative suffix **de**, that voice feature also characterizes an occlusive final consonant in the root: **-bd- -gd- -dd-**, as in the examples at (b) in table 30 (cf. also the t-final root, at (A. 2. (b) above).

P, K, and T, therefore, have alternative voicing exponents, one of those exponents, voicelessness, being appropriate to the voicelessness piece, and the other, voice, to the voice piece. In this respect they resemble P, K, and T in the t-final root.

It should also be noted that, although there is no variation in the root final, the initial consonant of the negative suffix has a different feature, tap, in association with a root-final vowel (**-Vr-**) from the plosion feature that it has when preceded by a consonant (**-Cd-**); hence it is necessary to distinguish a consonant-junction piece, at (b), from a vowel-junction piece, at (c). The two variant features are a function of this difference in type of piece.

3. *Junction of the verb root with a non-syllabic-vowel-initial suffix*

The phonetic exponents of z and its phonematic units differ only slightly, in this type of junction, from those appropriate to them in consonant-initial junction (at (2) above); P, K, T, and Ø are phonetically distinguished from each other in this type of junction too. Where the initial sound of the suffix is a non-syllabic vowel (**j**), those exponents can be symbolized as:

P	K	T	M	ŋ	N	Ø	
-p/b	**-k/g**	**ʔ**	**-m**	**-ŋ**	**-ĩ**	**-V**	**j-**

e.g.

(a) **lapjaŋ wakjaŋ lfiɔʔjaŋ tshəmjaŋ dɯŋjaŋ baĩjaŋ pɤjaŋ**
(b) **sjibjaŋ bɑgjaŋ**

Table 31: *z, P, K, etc., in non-syllabic-vowel-initial junction*

Glosses

(a) he is catching it; he is chasing it away; he is running; he is getting the price reduced; he is drinking; he is coming; he is giving it to him;
(b) he is sawing at it; she is sweeping it.

In this type of junction the phonetic exponents of Tz are plosion and glottality, and therefore, necessarily, voicelessness; but voicelessness alternates with voice (**p k** v. **b g**) for Pz and Kz, the latter feature being appropriate to fast-tempo utterances, in which voice characterizes the root-final plosive as well as the suffix-initial non-syllabic vowel.

Nz has nasalization, combined with a front and lip-spread type of post-syllabic vowel, as exponents characteristic of this type of piece.

4. *Interverbal junction (root word-final)*

In interverbal junction the final of the verb root is associated with the initial of a following word, in an utterance by the same or a different speaker. The phonetic exponents of z and its phonematic units in this type of junction are:

P	K	T	M	ŋ	N	Ø	
-p	**-k**	**-t**	**-m**	**-ŋ**	**-n**	**-V(:)**	e.g.
lap	**wak**	**lfio:t**	**tshɤm**	**dɯŋ**	**ban,**	**pɛn pɤ:, sɤ:, tsa:** [15]	

Table 32: *Phonetic exponents of z; interverbal junction*

Glosses

he catches it; he chases it away; he runs; he will get (the price) reduced; he drinks; he comes; he flies; he gives it to him; he dies; he eats it.

[15] I have noted vowel length for **tsa:** ' he eats it ' here; but there is evidence that a length difference in the vowel is used to distinguish (i) a present-tense intransitive (in interverbal junction) from (ii) a past-tense intransitive (in syllabic-vowel-initial junction, with the -A suffix); e.g.

(i) **dfia** (**wa**) **ta**
(ii) **dfia:** < **dfiaa**; (**wa**) **ta:** < **taa**

Glosses: (i) it falls; it rains; (ii) it fell; it rained; possibly the vowel length observed in **tsa:** is due to emphasis cf. note 10).

To conclude this section I will give a representative selection of the phonetic exponents of z and its seven phonematic units: (1. syllabic-vowel-initial-junction; 2. consonant-initial-junction: (a) voiceless piece; (b) voice piece; 3. non-syllabic-vowel-initial junction; 4. interverbal junction)

	P	K	T	N	M	ŋ	Ø	
1.	-w	-w	-(:)j	-(:)j	-m	-ŋ	-V(:)	V-
	-u/:j	-u/:j	-:	-:			-Vj/(:)	
			-ɾ	-n				
2a.	-p .	-k	-t	-n	-m	-ŋ	-V(:)	N-
2b.	-b	-g	-d	-n	-m	-ŋ		d-
							-V	ɾ-
3.	-p/b	-k/g	-ʔ	-ĩ	-m	-ŋ	-V	j-
4.	-p	-k	-t	-n	-m	-ŋ	-V(:)	

Table 33: *z and P, K, etc.: summary of phonetic exponents* (for supporting examples see tables 23, 30, 31 and 32)

D. The phonetic exponents of t, s, and z compared

In comparing the phonetic exponents of the three terms of the final system, t, s, and z, I will take first the junction context that provides the most phonetic criteria for distinguishing those three terms.

1. *Syllabic-vowel-initial junction*

	P	K	T	Ø	M	ŋ	N	
t:	-pt	-kt	-tt	-tt	-mt	-ŋt	-nt	V-
s:	-ms	-ŋs	-(:)/iɛ	-(:)s	-ms	-ŋs	-:/iɛ	
z:	-w/u/:	-w/u/:	-(:)(j)/ɾ	-V(:)	-m	-ŋ	-(:)j/n	

(for supporting examples see tables 6, 18, and 23).

2. *Consonant-initial junction*

This type of junction is less useful for distinguishing t, s, and z, but more useful than the previous type in providing phonetic criteria for distinguishing the phonematic units, especially P, K, T, N, and Ø:

	P	K	T	Ø	M	ŋ	N	
t:	-p	-k	-t	-t	-m	-ŋ	-n	N-
	-b	-g	-d	-d	-m	-ŋ	-n	d-
s:	-m	-ŋ	-n		-m	-ŋ	-n	N-/d-
				-V(:)				N-/ɾ-
z:	-p	-k	-t	-V	-m	-ŋ	-n	N-
	-b	-g	-d	-V	-m	-ŋ	-n	d-

(for supporting examples see table 11, 19, and 30).

3. *Non-syllabic-vowel-initial junction*

This type of junction also supports consonant-initial junction as regards phonetic criteria for the phonematic units:

	P	K	T	Ø	M	ŋ	N	
t:	-p/b	-k/g	-ʔ	-ʔ	-m	-ŋ	-˜/ĩ	j-
s:	-m	-ŋ	-ĩ	-V(:)	-m	-ŋ	-˜/ĩ	
z:	-p/b	-k/g	-ʔ	-V	-m	-ŋ	-ĩ	

(for supporting examples see tables 14, 20, and 31).

4. *Interverbal junction*

	P	K	T	Ø	M	ŋ	N
t:	**-p**	**-k**	**-t**	**-t**	**-m**	**-ŋ**	**-n**
s:	**-m**	**-ŋ**	**-n**	**-V:**	**-m**	**-ŋ**	**-n**
z:	**-p**	**-k**	**-t**	**-V(:)**	**-m**	**-ŋ**	**-n**

(for supporting examples see tables 15, 21, and 32).

This fourth type of junction, interverbal, is neither more nor less effective, from the point of view of phonetic criteria, than the consonant-initial and the non-syllabic-vowel-initial types.

E. l-piece roots

The t, s, and z types of piece have been grouped together, in (A)–(D), largely because of the grammatical relationships that can be shown to apply to certain lexical items belonging to those three classes: transitive *v.* intransitive, causative *v.* non-causative, and benefactive *v.* non-benefactive; there remains, however, a class of root that has no share in these grammatical relationships, and is, moreover, distinguished from the t, the s, and the z prosodic classes by the feature laterality (**-l**), a palatalized lateral. This lateral feature occurs only in vowel-initial junction; in other types of junction the l piece, so named after the lateral feature, has exactly the same phonetic exponents as the N phonematic unit has in the z piece (and, for that matter, the t or the s-piece); so I have given Nz examples below for comparison: (1. syllabic-vowel-initial junction; 2. consonant-initial junction; 3. non-syllabic-vowel-initial junction; 4. interverbal junction)

	1	2		3	4	
l:	**-l**	**-n**	**-n**	**-ĩ**	**-n**	
Nz:	**-n**	**-n**	**-n**	**-ĩ**	**-n;**	e.g.
l:	**phʏ(:)le**	**phʏnŋa**	**maphʏnde**	**phʏĩjaŋ**	**phʏn**	
Nz:	**bane**	**banŋa**	**mabande**	**baĩjaŋ**	**ban**	

Glosses

l: untie it; I shall undo it; do not untie it; he is untying it; he unties it;
Nz: come here; I shall come; do not come; he is coming; he comes.

III. *Congruence of the phonological level with the grammatical and other levels of analysis*

The prescription that I quoted from Firth as an introduction to this article appears to me to result in a simple and economical analysis of Bantawa, with what I conjecture to be the recent phonological history of the language, as it were, built in. I should therefore expect such an analysis to simplify the task of lexicographers and comparatists working within the Kiranti group.

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